

Claims

[c1] 1. An organic electroluminescent device, comprising:
a cathode;
an anode under the cathode;
an emitting layer, between the cathode and the anode;
a hole transport layer, between the emitting layer and the anode;
an electron transport layer, between the emitting layer and the cathode;
a hole injecting layer, between the hole transport layer and the anode; and
an intermediate layer, between the hole injecting layer and the hole transport
layer, wherein the intermediate layer has a mobility higher than that of the hole
transport layer.

[c2] 2. The organic electroluminescent device according to claim 1, wherein the
material of the intermediate layer includes derivative of triphenylamine.

[c3] 3. The organic electroluminescent device according to claim 1, wherein the
material of the intermediate layer includes derivative of tris-4, 4', 4''-(2-
naphthyl)-triphenylamine.

[c4] 4. The organic electroluminescent device according to claim 1, wherein the
material of the cathode includes lithium fluoride/aluminum (LiF/Al) alloy.

[c5] 5. The organic electroluminescent device according to claim 1, wherein the
material of the anode includes indium tin oxide.

[c6] 6. The organic electroluminescent device according to claim 1, wherein the
material of the hole transport layer includes N, N'-Di(naphthalene-1-yl)-N, N'-
diphenyl-benizidine) (NPB).

[c7] 7. The organic electroluminescent device according to claim 1, wherein the
material of the electron transport layer includes tri-(8-hydroxyquinoline)
aluminum (Alq_3).

[c8] 8. The organic electroluminescent device according to claim 1, wherein the
material of the hole injecting layer includes derivative of phthalocyanine.

[c9] 9. An organic electroluminescent device, comprising:
a cathode;
an anode, under the cathode;
an emitting layer, between the cathode and the anode;
an electron transport layer, between the emitting layer and the cathode;
a hole transport layer, between the emitting layer and the anode;
a hole injecting layer, between the hole transport layer and the anode; and
an intermediate layer, between the hole injecting layer and the hole transport layer, wherein the intermediate layer having a mobility higher than that of the hole injecting layer.

[c10] 10. The organic electroluminescent device according to claim 9, wherein the material of the intermediate layer includes derivative of triphenylamine.

[c11] 11. The organic electroluminescent device according to claim 9, wherein the material of the intermediate layer includes derivative of tris-4, 4', 4''-(2-naphthyl)-triphenylamine.

[c12] 12. The organic electroluminescent device according to claim 9, wherein the material of the cathode includes lithium fluoride/aluminum (LiF/Al) alloy.

[c13] 13. The organic electroluminescent device according to claim 9, wherein the material of the anode includes indium tin oxide.

[c14] 14. The organic electroluminescent device according to claim 9, wherein the material of the hole injecting layer includes derivative of phthalocyanine.

[c15] 15. The organic electroluminescent device according to claim 9, wherein the material of the hole transport layer includes N, N'-Di(naphthalene-1-yl)-N, N'-diphenyl-benizidine) (NPB).

[c16] 16. The organic electroluminescent device according to claim 9, wherein the material of the electron transport layer includes tri-(8-hydroxyquinoline) aluminum (Alq_3).